

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-46 (Canceled)

47. (Currently amended) A method of diagnosing or monitoring multiple sclerosis (MS) comprising the steps of:

- (a) obtaining a biological sample from a patient, wherein the biological sample is serum, plasma, blood or cerebrospinal fluid;
- (b) measuring the amount of one or more MS diagnostic compounds in the biological sample, the MS diagnostic compound(s) being:
  - (i) a compound having a mass of about 175 as determined by liquid chromatography and mass spectrometry;
  - (ii) a compound having a mass of about 145 as determined by liquid chromatography and mass spectrometry;
  - (iii) aspartic acid-alanine diketopiperazine (DA-DKP);
  - (iv) N-acetyl-alanine-serine diketopiperazine (NAS-DKP); or
  - (v) two or more of the foregoing;

wherein:

the absence of compound (i), compound (ii) or both compounds (i) and (ii) from the biological sample is indicative of MS; and

an elevated amount of DA-DKP, NAS-DKP or both DA-DKP and NAS-DKP in the biological sample is indicative of active MS.

48. (Previously presented) The method of Claim 47 wherein DA-DKP, NAS-DKP or both are measured.

49. (Previously presented) The method of Claim 47 wherein compound (i), compound (ii) or both are measured.

50. (Previously presented) The method of Claim 48 wherein compound (i), compound (ii) or both are measured.

51. (Currently amended) The method of Claims 47 wherein the biological sample is serum, plasma, or blood ~~or cerebrospinal fluid~~.

52. (Previously presented) The method of Claim 51, wherein the biological sample is plasma.

53. (Previously presented) The method of Claim 51, wherein the biological sample is serum.

54. (Previously presented) The method of any one of Claims 47-53 wherein step (b) is conducted by mass spectrometry, immunoassay or both.